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DOCKET NO.: 243476US6YA

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

Anthony DIP, et al.

SERIAL NO: 10/673,375

GROUP: 2813

FILED: September 30, 2003

EXAMINER: Monica D. HARRISON

RCE FILED: July 7, 2006

FOR: DEPOSITION OF SILICON-CONTAINING FILMS FROM
HEXACHLORODISILANE

LETTER


Mail Stop DD
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Submitted herewith are an International Search Report and Written Opinion for the Examiner's consideration. The reference cited therein has been previously cited on June 1, 2005.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
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PATENT COOPERATION TREATY

OBLON, SPIVAK, McCLELLAND
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DOCKETING DEPT.

From the
INTERNATIONAL SEARCHING AUTHORITY

Initials/Date Docketed: _____
Type of Resp(s): _____
Due Date(s): _____
PCT

To:
GREGORY J. MAIER
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT,
P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 243476WO		Date of mailing (day/month/year) 08 AUG 2006
FOR FURTHER ACTION See paragraph 2 below		
International application No. PCT/US04/26744	International filing date (day/month/year) 20 September 2004 (20.09.2004)	Priority date (day/month/year) 09 March 2003 (09.03.2003)
International Patent Classification (IPC) or both national classification and IPC IPC: Please See Continuation Sheet USPC: 427/123,248.1,255.28,255.394;438/279-308,652-688		
Applicant TOKTO ELECTRON LIMITED		

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.
For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201	Date of completion of this opinion 22 June 2006 (22.06.2006)	Authorized officer Carl Whitehead Jr. Telephone No. 571-272-1702
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Form PCT/ISA/237 (cover sheet) (April 2005)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 243476WO	FOR FURTHER ACTION <div style="display: flex; justify-content: space-between; font-size: small;"> see Form PCT/ISA/220 as well as, where applicable, item 5 below. </div>	
International application No. PCT/US04/26744	International filing date (<i>day/month/year</i>) 20 September 2004 (20.09.2004)	(Earliest) Priority Date (<i>day/month/year</i>) 09 March 2003 (09.03.2003)
Applicant TOKTO ELECTRON LIMITED		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 2 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the Report

a. With regard to the **language**, the international search was carried out on the basis of:

- ☒ the international application in the language in which it was filed.
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the **title**,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1A

- ☒ as suggested by the applicant.
- ☐ as selected by this Authority, because the applicant failed to suggest a figure.
- ☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/26744

A. CLASSIFICATION OF SUBJECT MATTER

IPC: B05D 5/12(2006.01);C23C 16/00(2006.01),16/22(2006.01),16/34(2006.01);H01L 21/336(2006.01),21/44(2006.01)

USPC: 427/123,248.1,255.28,255.394;438/279-308,652-688

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 427/123, 248.1, 255.28, 255.394; 438/279-308, 652-688

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
<i>Filed</i> X <i>on Y</i> 6/1/05	US 2003/0215570 A1 (Seutter et al) 20 November 2003 (20.11.2003), pg.2, paragraph 0020 thru pg.5, paragraph 0037.	1-46

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

22 June 2006 (22.06.2006)

Date of mailing of the international search report

08 AUG 2006

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Authorized officer

Carl Whitehead Jr.

Telephone No. 571-272-1702

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US04/26744

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US04/26744

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>3, 6, 9, 25, 26, and 31-33</u>	YES
	Claims <u>1, 2, 4, 5, 7, 8, 10-24, 27-30, 34-46</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>1-46</u>	NO
Industrial applicability (IA)	Claims <u>1-46</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Claims 1, 2, 4, 5, 7, 8, 10-24, 27-30 and 34-46 lack novelty under PCT Article 33(2) as being anticipated by Seutter et al (US 2003/0215570 A1). Seutter et al discloses all above claimed subject matter (pg.2, paragraph 0020 thru pg.5, paragraph 0037).

Claims 3, 6, 9, 25, 26, 31-33 lack an inventive step under PCT Article 33(3) as being obvious over Seutter et al (US 2003/0215570 A1). Seutter et al discloses the flow rates of HCD, inert gas (claim 3; pg.2, paragraph 0021), hydrogen-containing gas (claim 6; pg. 2, paragraph 0022), silicon containing gas (claim 9; pg. 2, paragraph 0022) (pg.5, paragraph 0037), germanium film (claims 25 and 26; pg.2, paragraph 0023), and providing the process chamber pressure (claims 31-33; pg.2, paragraph 0020) however, Seutter et al does not disclose the specified flow rates, percentage of germanium film, nor the process chamber pressure.

Claims 1-46 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.